(A) L 10939-66 EWT(1)/EWA(j)/EWT(m)/EWP(j)/T/EWA(b)-2 WW/JK/RM

ACC NR: AP6002540 SOURCE CODE: UR/0286/65/000/023/0041/0041

INVENTOR: Rogovin, Z. A.; Virnik, A. D.; Sidel'kovskaya, F. P.; Mal'tseva, T. A.; Ibragimov, F.

ORG: none

TITLE: Manufacture of copolymer end products. Class 29, No. 176661

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 23, 1965, 41

TOPIC TAGS: graft copolymer, bactericide, copolymer, polymer, synthetic material

ABSTRACT: An Author Certificate has been issued for a method for manufacturing end products with bactericidal properties from copolymers prepared by grafting synthetic polymers (unspecified) to natural polymers, such as cellulose. The method involves treatment of the products with iodine solution. [BO]

SUB CODE: 11, 07 SUBM DATE: 23Jun64/ ATD PRESS: 4170

Card 1/1 UDC: 677.494.7.-13:661.728.3-139

[redacted], V.I.; [redacted], A.I.; [redacted], V.A.

[redacted] regularities in the nucleophilic substitution of various [redacted]ulose esters with hydrohalides. Vysokom. soed. 7 no.2:199-204 F '65. (MIRA 18:3)

1. Moskovskiy tekstil'nyy institut.

[illegible], M.D.; [illegible]; [illegible]; [illegible];
ROGOVIN, Z.A.

Infrared spectroscopic study of the ion exchange of graft copolymers of cellulose and polyacrylhydroxamic acid with Fe^{+3} and Cu^{+2} ions. Vysokom. soed. 7 no.2:205-210 F '65.
(MIRA 18:3)

1. Moskovskiy tekstil'nyy institut.

KHOLMURADOV, N.; KOZLOVA, Yu.S.; POLYAKOV, A.I.; ROGOVIN, Z.

Synthesis of tosylnitrodeoxycellulose. Vysokom. soed. 7 no.3. 439-442 Mr '65. (MIRA 18:7)

1. Moskovskiy tekstil'nyy institut.

L 42130-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL WW/RM
ACCESSION NR: AP5011258 UR/0190/65/007/004/0756/0756

34
B

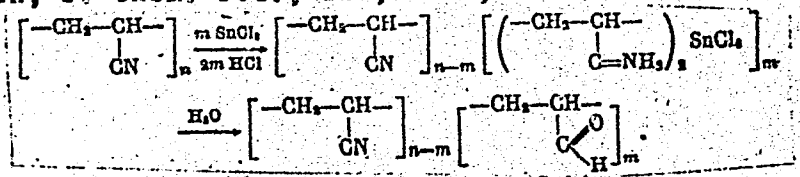
AUTHOR: Konnova, N. E.; Gabriyelyan, G. A.; Rogovin, Z. A.; Konkin, A. A.

TITLE: New preparative method for an acrylonitrile-acrolein copolymer by the method of conversion to polymer analogs

SOURCE: Vysokomolekulyarnyye soyedeniya, v. 7, no. 4, 1965, 756

TOPIC TAGS: copolymer, polyacrylonitrile, acrylonitrile acrolein copolymer

ABSTRACT: The feasibility has been shown of preparing an acrylonitrile-acrolein copolymer by conversion of some of the nitrile groups in polyacrylonitrile to aldehyde groups by the Stephen method (O. Stephen, J. Chem. Soc., 127, 1874, 1925):



Card 1/2

L 42130-65
ACCESSION NR: AP5011258

It is noted that previously such a copolymer was preparable only by starting from the monomers. The reaction was carried out both on polyacrylonitrile and polyacrylonitrile fiber in dioxane at 60—100C. The amount of $SnCl_2$ used was 0.6 to 1.5 mol/repeat unit of polyacrylonitrile. Copolymers containing up to 20 mol% aldehyde groups were prepared. Orig. art. has: 1 formula. [SM]

ASSOCIATION: none

SUBMITTED: 18Sep64 ENCL: 00 SUB CODE: OC,GC

NO REF SOV: 000 OTHER: 002 ATD PRESS: 3239

Card 2/2

VLADIMIROV, [illegible]; GAL'PERIN, L.S.; FEKER, Kh.S.; ROGOVIN, Z.A.

Synthesis of keto group-containing cellulose esters. Vysokom. soed. 7 no.5:786-790 My '65. (MIRA 18:9)

1. Moskovskiy tekstil'nyy institut.

PREDVODITELEV, D.A.; NIFANT'YEV, E.Ye.; ROGOVIN, Z.A.

Synthesis of cellulose hypophosphites. Vysokom. soed. 7 no.5:791-794 My '65. (MIRA 18:9)

1. Moskovskiy tekstil'nyy institut.

SMIRNOVA, G.M.; POLYAKOV, A.I.; ROGOVIN, Z.A.

Synthesis of cellulose derivatives containing 2,3-anhydro rings. Vysokom. soed. 7 no.6:972-977 Je '65. (MIRA 18:9)

1. Moskovskiy tekstil'nyy institut.

PREDVODITELEV, D.A.; NIFANT'YEV, E.Ye.; ROGOVIN, Z.A.

Synthesis of cellulose phosphites by the reaction of monomethyl phosphite with cellulose and their subsequent transformations. Vysokom. soed. 7 no.6:1005-1009 Je '65. (MIRA 18:9)

1. Moskovskiy tekstil'nyy institut.

KHOMYAKOV, A.P.; PENENZHIK, M.A.; VIRNIK, A.D.; ROGOVIN, Z.A.

Synthesis of dialdehyde and dicarboxyl dextrans. Vysokom. soed. 7 no.6: 1030-1034 Je '65. (MIRA 18:9)

1. Moskovskiy tekstil'nyy institut.

KHOMYAKOV, ...; VIRNIK, A.D.; USHAKOV, S.N. [deceased]; ROGOVIN, Z.A.;
Prinimal uchastiye: PENENZHIK, M.A.

Synthesis of polymeric medicinal compounds based on dextran derivatives.
Vysokom. soed. 7 no.6:1035-1040 Je '65. (MIRA 18:9)

1. Moskovskiy tekstil'nyy institut.

L 00744-66 EPF(c)/EWT(m)/EWP(j)/T RPL RM/WW

ACCESSION NR: AP5020960 UR/0190/65/007/008/1297/1300

AUTHOR: Movsum-Zade, A. A.; Kuznetsov, G. A.; Fomenko, L. N.; Livshits, R. M.; Konkin, A. A.; Rogovin, Z. A.

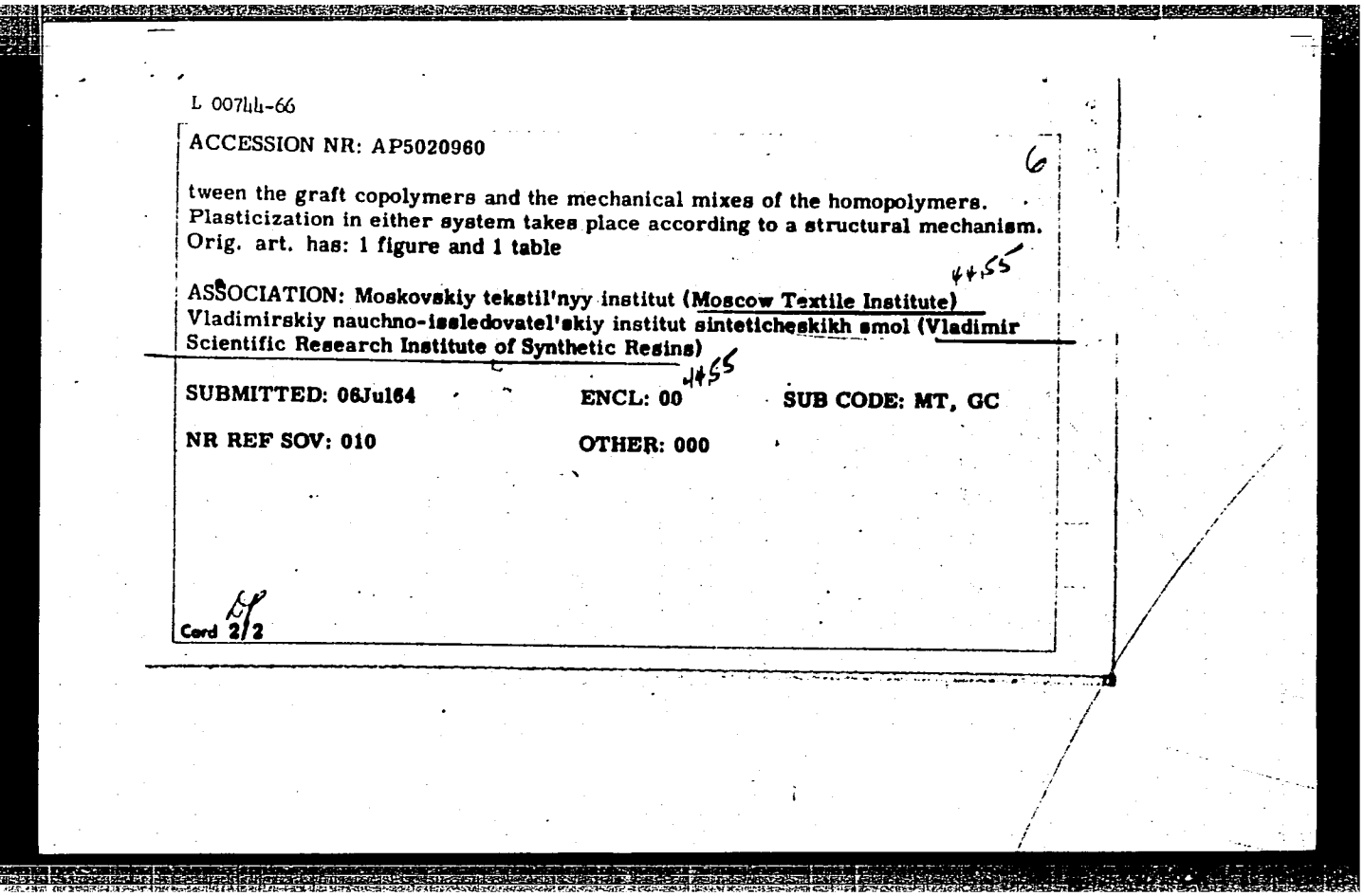
TITLE: Plasticization of cellulose triacetates by grafting on polybutylacrylate

SOURCE: Vysokomolekulyarnyye soyedineniya. v. 7. no. 8, 1965, 1297-1300

TOPIC TAGS: plasticization, block copolymer, thermomechanical property, copolymerization

ABSTRACT: Plasticization of rigid polymers by graft copolymerization with incompatible flexible polymers was investigated. Cellulose triacetate-polybutylacrylate graft copolymers with different compositions were obtained by acetylating previously synthesized cellulose-polybutylacrylate graft copolymers. The latter were synthesized with the aid of an oxidation-reduction system using Ce^{+4} salts. Acetylation was carried out in homogeneous medium in the presence of $HClO_4$ as catalyst. The thermomechanical properties of mechanical mixtures of cellulose triacetate with polybutylacrylate (which is incompatible with the former) and of the graft copolymers were investigated. It was impossible to differentiate be-

Card 1/2



L 00744-66

ACCESSION NR: AP5020960

6

tween the graft copolymers and the mechanical mixes of the homopolymers. Plasticization in either system takes place according to a structural mechanism. Orig. art. has: 1 figure and 1 table

4455

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute) Vladimirskiy nauchno-issledovatel'skiy institut sinteticheskikh smol (Vladimir Scientific Research Institute of Synthetic Resins)

4455

SUBMITTED: 06Jul64 ENCL: 00 SUB CODE: MT, GC

NR REF SOV: 010 OTHER: 000

Card 2/2

L 64554-65 EWT(m)/EPF(c)/EWP(j)/T/EWA(c) RPL WW/RM

ACCESSION NR: AP5020975 UR/0190/65/007/008/1463/1467
678.01:54

AUTHOR: Morin, B. P.; Kryazhev, Yu. G.; Rogovin, Z. A.

TITLE: New method of incorporating into polymer macromolecules peroxide groups used for the synthesis of block copolymers

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 8, 1965, 1463-1467

TOPIC TAGS: block copolymer, copolymerization, polyvinyl alcohol, polycapramide, peroxide, oxidation reduction reaction, cellulose

ABSTRACT: The new method developed herein for incorporating peroxide groups into a polymer is based on the oxidation of a polymer in oxidation-reduction systems containing H_2O_2 as one component. The polymer was swelled in a solution of one component of the system, and then treated with the second component. Iron salts ($FeSO_4$, $FeCl_3$) in conjunction with H_2O_2 were most effective. The oxidized polymers were then capable of initiating block copoymerization. Block copolymers of cellulose, polyvinyl alcohol or polycapramide with acrylonitrile, 2-methyl-5-vinylpyridine, acrylic or methacrylic acids were synthesized. The

Card 1/2

L 64554-65
ACCESSION NR: AP5020975

3

mechanism of peroxide group formation in the initial polymer macromolecule is discussed. The block copolymerization is initiated by macroradicals formed by dissociation of the peroxide groups introduced by the treatment in an H_2O_2 oxidizing agent or H_2O_2 reducing agent system. Orig. art. has: 3 sets of equations, 2 tables

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute) 44,55

SUBMITTED: 09Oct64 ENCL: 00 SUB CODE: MT, GC

NR REF SOV: 000 OTHER: 004

Card 2/2

GULINA, [illegible], LIVSHITS, R.M., ROGOVIN, Z.A.

Synthesis of graft copolymers of cellulose and polyacrylonitrile in the presence of the oxidation-reduction system cellulose - Fe^{2+} - H_2O_2. Part 2: Effect of the initiation conditions on the polymerization coefficients of polyacrylonitrile and on the degree of conversion of cellulose. Vysokom. soed. 7 no.9:1529-1534 S '65. (MIRA 18:10)

1. Moskovskiy tekstil'nyy institut.

KOROTKOVA, A.Ya.; ROGOVIN, Z.A.; Prinimala uchastiye LARINA, V.V.

Synthesis of graft copolymers of cellulose and polymethyl vinyl ketone. Vysokom. soed. 7 no.9:1571-1575 S '65.
(MIRA 18:10)

1. Moskovskiy tekstil'nyy institut.

BALABAYEVA, M.D.; SHARKOVA, Ye.F.; ZHBANKOV, R.G.; VIRNIK, A.D.; ROGOVIN, Z.A.

Infrared spectroscopy method of studying the structure of some graft copolymers of cellulose. Vysokom.soed. 7 no.10:1763-1766 O '65. (MIRA 18:11)

1. Moskovskiy tekstil'nyy institut.

(A) L 13523-66 EWT(m)/ETC(F)/EWG(m)/EWP(J)/T RM/DS

ACC NR: AP6001855 SOURCE CODE: UR/0190/65/007/012/2020/2023

AUTHORS: Chaykina, Ye. A.; Gal'braykh, L. S.; Rogovin, Z. A.

ORG: Moscow Textile Institute (Moskovskiy tekstil'nyy institut)

TITLE: Synthesis of a polymeric complexing agent based on modified cellulose substituted with iminodiacetate groups

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 12, 1965, 2020-2023

TOPIC TAGS: ion exchange resin, cellulose, intermolecular complex

ABSTRACT: Preparation of a selective ion exchanger by nucleophilic substitution reaction of cellulose tosylate (I) with iminodiacetic acid (II) or its diethyl ester (III) was investigated. Reaction proceeded according to the equation

$$[C_6H_7O_2(OH)_{3-x}(OSO_2C_6H_4CH_3)_x]_n \xrightarrow[-nCH_3C_6H_4SO_3H]{nHN(CH_2COOR)_2} [C_6H_7O_2(OH)_{3-x}(N(CH_2COOR)_2)_x]_n,$$

where R = H, C_2H_5. The effect of the temperature and time of reaction on the composition of the product was studied. Optimum reaction conditions were 16--17 hours at 120C, with liquor ratio of 1:20 and molar ratio of I:II = 1:5. Degree of sub-

Card 1/2 UDC: 661.728.89

L 13523-66
ACC NR: AP6001855

stitution of the product γ = 29--30 (calculated from N content). Content of carboxyl groups = 12.5--13.5%, exchange capacity of the exchanger (fibrous product) 2.5 mg-equiv/g (measured with 0.1N NaØH). Preliminary study of the properties of the obtained exchange resin shows it to form complexes with Cu^{2+} and Ni^{2+} ions. Orig. art. has: 2 tables and 1 equation.

SUB CODE: 07/ SUBM DATE: 16Oct64/ ORIG REF: 004/ OTH REF: 006

Card 2/2 DR

A L 11526-66 EWT(m)/EWP(j)/EWA(h)/EWA(1) RM

ACC NR: AP6000187 SOURCE CODE: UR/0190/65/007/012/2174/2175

AUTHORS: Dimitrov, D. G.; Gal'braykh, L. S.; Rogovin, Z. A.

ORG: none

TITLE: New method for synthesis of cellulose derivatives

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 12, 1965, 2174-2175

TOPIC TAGS: polymer, radical polymerization, polycondensation, cellulose, cellulose plastic

ABSTRACT: Several desoxyderivatives of cellulose were synthesized by a radical addition reaction. The starting material was 5,6 cellulosene suggested by Ye. D. Kaverzneva, V. I. Ivanov, and A. S. Salova (Izv. AN SSSR, Otd. khim. n., 1949, 369). The reaction was carried out in a heterogeneous phase in an atmosphere of dry argon at 30—65C, and with UV irradiation in the presence of benzoyl peroxide, tertiary butyl peroxide, or other peroxides. The compounds synthesized were: 6-C-desoxy-6-trichloromethylcellulose, 5-chloro-6-C-desoxy-6-trichloromethyl cellulose, the dichloride of 5-chloro-6-C-desoxy-cellulosephosphonic acid, and 6-C-desoxytrichlorosililcellulose. The degree of substitution was ranged from 15—20. Further work is in progress. Orig. art. has: 1 equation.

SUB CODE: 11,07/SUBM DATE: 21Jun65/ ORIG REF: 001/ OTH REF: 004

UDC: 541.64+661.728.89

Card 1/1

L 42959-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM

ACCESSION NR: AP5010991 UR/0153/65/008/001/0124/0126

AUTHOR: Ivanov, N. V.; Rogovin, Z. A.; Nguyen Vin' Chi

TITLE: Synthesis of silicon-containing cellulose ethers

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 8, no. 1, 1965, 124-126

TOPIC TAGS: cellulose ether, alkylated cellulose, silicon containing cellulose ether, mercerization

ABSTRACT: There is some indication in the literature that silicon-containing cellulose ethers exhibit desirable technical properties. In this work, alkalized cellulose was alkylated with chloromethyltrimethylsilane, iodomethyltrimethylsilane, and chloromethyltriethylsilane. It was found that when cellulose, prior to treatment with chloromethyltriethylsilane at 120C for 20 hours, was mercerized with 50% NaOH rather than with 40% NaOH, the silicon content of the final product fell from 4.8% to 1.7%. This may be explained by cleavage of the chloromethyl group, concurrent with the hydrolysis of chloromethyltriethylsilane. Other data show that at temperatures above 100C,

Card 1/2

L 42959-65

ACCESSION NR: AP5010991

iodomethyltrimethylsilane is much more reactive than chloromethyltrimethylsilane. Similarly, chloromethyltriethylsilane is less reactive than chloromethyltrimethylsilane. The silicon-containing cellulose ethers obtained are not soluble in benzene, toluene, acetone, dichloroethane, and other common solvents. They are also not soluble in ammoniacal copper solution. Orig. art. has: 1 formula and 2 tables. [VS]

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 18Oct63 ENCL: 00 SUB CODE: MT, OC

NO REF SOV: 003 OTHER: 000 ATD PRESS: 3236

Card 2/2

L 59282-65 EWG(j)/EWT(m)/EPF(c)/EPR/EWP(j)/T/EWA(h)/EWA(l) Pc-4/Pr-4/Ps-4/Peb
RPL WW/RM

ACCESSION NR: AP5015571 UR/0153/65/008/002/0291/0296

40
38
13

AUTHOR: Gulina, A. A., Kryazhev, Yu. G., Rogovin, Z. A.

TITLE: Synthesis and study of the properties of a cellulose-polystyrene graft copolymer

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 8, no. 2, 1965, 291-296

TOPIC TAGS: cellulose plastic, polystyrene, graft copolymer, copolymer stability

ABSTRACT: The method of synthesis used made it possible to carry out the reaction under mild conditions in an aqueous medium without simultaneous homopolymer formation. Cellulose was alkylated with 4β-hydroxyethylsulfonyl-2-aminoanisole acid sulfate; the amino group was then diazotized, and the diazo group was reduced by $FeSO_4$ in the presence of the styrene monomer, present in an aqueous emulsion. The graft copolymerization took place in argon in sealed ampoules. The effect of the reaction temperature and reaction time on the composition of the copolymers is discussed. The copolymers obtained were quite hydrophobic, and this hydrophobicity causes them to be more stable to attack by mineral acids (hydrolysis by H_2SO_4) than the original cellulose material.

and it was found that under the conditions of synthesis employed, the degree of polymeriza-

Card 1/2

L 59282-65

ACCESSION NR: AP5015571

2

tion of polystyrene in the side chain of the macromolecule of the graft copolymer amounts to 700. "We express our appreciation to N. D. Rozenblyum, in whose laboratory the irradiation of the samples was carried out." Orig. art. has: 2 figures and 4 tables.

ASSOCIATION: Kafedra khimicheskikh volokon, Moskovskiy tekstil'nyy institut (Department of Chemical Fibers, Moscow Textile Institute)

SUBMITTED: 09Sep63 ENCL: 00 SUB CODE: MT

NO REF SOV: 003 OTHER: 003

Card 2/2

SHARKOVA, Ye. P.; VIRNIK, A. D.; ROGOVIN, Z. A.

Synthesis of cellulose ether containing a double bond, and the polymer analog conversions. Izv. vys. ucheb. zav.; khim. i khim. tekh. 8 no.3:465-468 '65. (MIRA 18:10)

1. Moskovskiy tekstil'nyy institut, kafedra khimicheskikh volokon.

A L 9738-66 EWT(m)/EWP(j)/T RPL WW/RM

ACC NR: AP5026428 SOURCE CODE: UR/0153/65/008/004/0651/0654

AUTHOR: Mal'tseva, T. A.; Snezhko, D. L.; Virnik, A. D.; Rogovin, Z. A.

ORG: Department of Synthetic Fibers, Moscow Textile Institute (Kafedra khimicheskikh volokon, Moskovskiy tekstil'nyy institut)

TITLE: Synthesis of graft copolymers of cellulose and polyacrylic acid

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 8, no. 4, 1965, 651-654

TOPIC TAGS: graft copolymer, acrylic acid, cellulose plastic, organic synthetic process

ABSTRACT: In the laboratory of the authors, a new method was recently developed for synthesizing graft copolymers of cellulose and synthetic polymers. It consists in the preliminary introduction of peroxide groups into the polymer macromolecule in Fe^{2+}/H_2O_2 and Fe^{3+}/H_2O_2 redox systems. Subsequent decomposition of these peroxide groups in the presence of Fe^{2+} ions produces macroradicals which initiate the growth of the chain. The authors studied the conditions of this process and determined the effect of various factors ($FeSO_4$ and H_2O_2 concentration, temperature of treatment with H_2O_2, grafting temperature, monomer concentration) on the composition of the graft copolymers formed. It was found that the content of grafted polyacrylic acid in the copolymer rises sharply as the H_2O_2 concentration

UDC: 677.46

Card 1/2

L 9738-66

ACC NR: AP5026428

increases to 2.5%, and that when the Fe^{3+}/H_2O_2 system is used, less concentrated H_2O_2 solutions can be used than in the case of Fe^{2+}/H_2O_2. Orig. art. has: 4 tables.

SUB CODE: 11,07 / SUBM DATE: 11Jul64 / ORIG REF: 002

Card 2/2

PREDVODITELEV, D.A.; TYUGANOVA, M.A.; NIFANT'YEV, E.Ye.; ROGOVIN, Z.A.

Synthesis of phosphorous cellulose esters by reesterification of dimethyl phosphite and their subsequent transformations. Zhur.VKHO 10 no.4:459-461 '65. (MIRA 18:11)

1. Moskovskiy tekstil'nyy institut.

MAKHKAMOV, K., aspirant; VIRNIK, A.D., starshiy nauchnyy sotrudnik; ROGOVIN, Z.A.

Investigating the effect of the chemical structure of some stabilizers on the resistance to fading of cellulose acetate fabrics. Tekst.prom. 25 no.1:28-30 Ja '65.
(MIRA 18:4)

1. Institut khimii AN Tadzhikskoy SSR (for Makhkamov). 2. Moskovskiy tekstil'nyy institut (for Virnik). 3. Zaveduyushchiy kafedroy khimicheskikh volokon Moskovskogo tekstil'nogo instituta (for Rogovin).

MAL'TSEVA, T.A., aspirant; VIRNIK, A.D., starshiy nauchnyy sotrudnik; ROGOVIN, Z.A., prof.; SHCHEGLOVA, G.V., aspirant; VASHKOV, V.I., prof.

Antibacterial cellulose fibers and fabrics. Tekst. prom. 25 no.4:15-17 Ap '65. (MIRA 18:5)

1. Moskovskiy tekstil'nyy institut (for Mal'tseva, Virnik, Rogovin). 2. TSentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut (for Shcheglova, Vashkov).

MAL'TSEVA, T.A., aspirant; VIRNIK, A.D., starshiy nauchnyy sotrudnik; ROGOVIN, Z.A., prof.; SHCHEGLOVA, G.V., aspirant; VASHKOV, V.I., prof.

Antimicrobic synthetic fibers and fabrics. Tekst. prom. 25 no.9:31-32 S '65. (MIRA 18:10)

1. Moskovskiy tekstil'nyy institut (for Mal'tseva, Virnik, Rogovin). 2. TSentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut (for Shcheglova). 3. Direktor TSentral'nogo nauchno-issledovatel'skogo dezinfektsionnogo instituta (for Vashkov).

LIVSHITS, R.M.; ROGOVIN, Z.A.

Graft copolymers of cellulose and its derivatives. Usp. khim. 34 no.6:1086-1107 Je '65. (MIRA 18:7)

1. Moskovskiy tekstil'nyy institut.

L 18394-66 EWT(m)/EWP(j)/T (A) WW/RM SOURCE CODE: UR/0190/66/008/001/0020/0025

ACC NR: AP6003408

AUTHORS: Garbuz, N. I.; Zhbankov, R. G.; Korotkova, A. Ya.; Kryazhev, Yu. G.; Rogovin, Z. A.

ORG: Institute of Physics, AN BSSR (Institut fiziki AN BSSR); Moscow Textile Institute (Moskovskiy tekstil'nyy institut)

45 B

TITLE: Study of carbonyl-substituted cellulose graft copolymers by means of IR spectroscopy (189th report in series "Investigation of Structure and Properties of Cellulose and Its Derivatives")

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 1, 1966, 20-25

TOPIC TAGS: graft copolymer, cellulose plastic, IR spectroscopy / IK-10 IR spectrophotometer

ABSTRACT: IR spectra of carbonyl-substituted graft copolymers of cellulose and polymethylvinylketone (I), of polymethacrolein (II), and of poly-2-methyl-5-vinyl-N-ethanalpyridinium chloride have been investigated. Preparation of the graft copolymers has been described earlier by A. Ya. Korotkova and Z. A. Rogovin (Vysokomolek. soyed., 7, 1571, 1965); and by A. Ya. Korotkova, Yu. G.

UDC: 661.728.89+678.01:53

Card 1/2

L 18394-66

ACC NR: AP6003408

Kryazhev, and Z. A. Rogovin (Vysokomolek. soyed., 6, 1980, 1964). The spectra were obtained on a double beam spectrophotometer IK-10 in the regions 2600--3800 cm^{-1} (LiF prism), 700--1800 cm^{-1} (NaCl prism), and 400--700 cm^{-1} (KBr prism). Carbonyl absorptions in these regions (typical for the investigated graft copolymers and homopolymers) are described and discussed. Mechanisms of methylvinylketone and methacrolein polymerization during the formation of graft polymers of cellulose with (I) and (II) have been investigated. Orig. art. has: 1 table, 5 figures, and 4 structures.

SUB CODE: 07/ SUBM DATE: 04Feb65/ ORIG REF: 006/ OTH REF: 003

Card 2/2 mc

L 18347-66 EWT(m)/EWP(j)/T (A) WW/RM SOURCE CODE: UR/0190/66/008/001/0042/0048

ACC NR: AP6003412

AUTHORS: El'garf, S. A.; Konkin, A. A.; Rogovin, Z. A.

ORG: Moscow Textile Institute (Moskovskiy tekstil'nyy institut)

TITLE: Synthesis of polyacrylonitrile graft copolymers

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 1, 1966, 42-48

TOPIC TAGS: graft copolymer, polyacrylonitrile, polymerization initiator, redox reaction

ABSTRACT: A new method for synthesizing graft copolymers of modified polyacrylonitrile (I) with polyacrylonitrile and polymethacrylate (II) while using a redox system is described. Modified (I) was prepared from acrylonitrile and α-methacrolein (the presence of an aldehydo-group in the latter enabled the polymer to act as a reducing agent in the redox system). The redox polymerization method was described earlier by A. R. Kol'k, A. A. Konkin, and Z. A. Rogovin (Khimich. volokna, 1963, No. 4, 12). Effects of the concentration of ceric sulfate and sulfuric acid and the reaction time upon the rate of formation and yield of graft copolymer of modified (I) with (I) and/or (II) were studied.

UDC: 541.64+678.745

Card 1/2

L 13347-66
ACC NR: AP6003412

It was shown that the initiation step in the graft polymerization, occurring via the redox system, takes place with localization of an unpaired electron at the carbonyl carbon atom and that the side chain is attached to the main chain of the graft copolymer via C-C bond. The authors express their gratitude to N. Makarevich for taking the IR spectra. Orig. art. has: 1 table, 4 figures, and 3 equations.

SUB CODE: 07/ SUBM DATE: 10Feb65/ ORIG REF: 002/ OTH REF: 006

Card 2/2 mc

L 17721-66 EWP(j)/EWT(m) RM

ACC NR: AP6003415 SOURCE CODE: UR/0190/66/008/001/0076/0079

AUTHORS: Predvoditelev, D. A.; Nifant'yev, E. Ye.; Rogovin, Z. A. 36

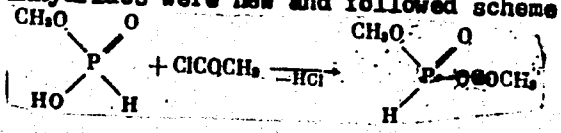
ORG: Moscow Textile Institute (Moskovskiy tekstil'nyy institut) B

TITLE: New method for the synthesis of phosphor-containing cellulose esters 7,44,55

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 1, 1966, 76-79

TOPIC TAGS: cellulose, phosphate ester, esterification, phosphorylation, phosphorous acid, organic synthetic process, ester

ABSTRACT: Reaction of mixed acetic and methyl phosphorous anhydride (I) with cellulose (II) yielded cellulose alkyl phosphites (III), while esterification of II with methylphosphoric anhydride (IV) gave corresponding phosphate (V). Both reactions were of interest, as the prior methods of preparation of these compounds required rigorous conditions leading to the destruction of cellulose. Syntheses of both types of anhydrides were new and followed scheme 1:



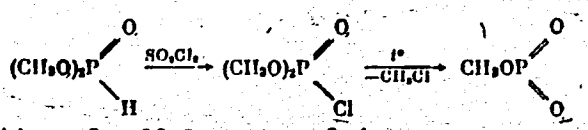
Card 1/2

UDC: 541.64+661.728.89

L 17721-66

ACC NR: AP6003415

and scheme 2:



Preliminary activation of cellulose with 80% acetic acid was required. III was prepared at 50--60C in an excess of I or in an organic solvent. Effects of time, temperature, and catalyst upon the amount of P introduced into the cellulose ester macromolecule were studied. Preparation of V required higher temperatures due to the lower reactivity of anhydrides of pentavalent phosphorus, and thus gave less satisfactory results. Orig. art. has: 2 figures and 3 equations.

SUB CODE: 07/ SUBM DATE: 15Feb65/ ORIG REF: 005/ OTH REF: 001

Card 2/2 nst

L 23327-66 EWT(m)/EWP(j) RM

ACC NR: AP6006974 (A) SOURCE CODE: UR/0190/66/008/002/0213/0218

AUTHORS: Predvoditelev, D. A.; Nifant"yev, E. Ye.; Rogovin, Z. A.

ORG: Moscow Textile Institute (Moskovskiy tekstil'nyy institut)

TITLE: Synthesis and chemical transformations of cellulose alkylene phosphites (192nd report in the series "Study of the structure and properties of cellulose and its derivatives")

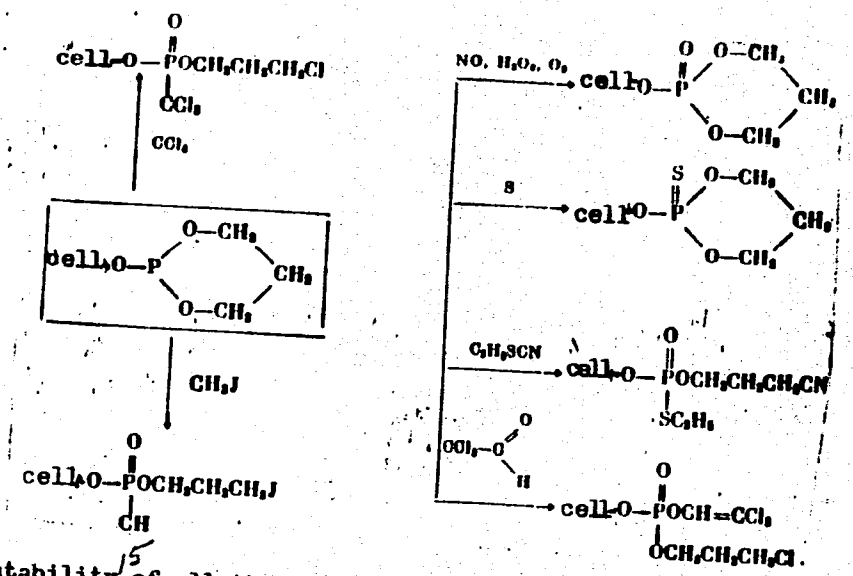
SOURCE: Vyspkomolekulyarnyye soyedineniya, v. 8, no. 2, 1966, 213-218

TOPIC TAGS: cellulose plastic, phosphorylation, organic synthetic process

ABSTRACT: Synthesis of cellulose alkylene phosphites by phosphorylation of cellulose with amides of propylene glycol phosphites or with ethylene glycol phosphites is described. Effect of the structure of the amides, reaction time, and temperature upon the amount of the phosphorus incorporated into the product was investigated and is illustrated in Fig. 1. Reactions of cellulose propylene phosphite with a variety of reagents and the products obtained are summarized by

Card 1/3

UDC: 66.095.26



Hydrolytic stability of all the resulting phosphite esters was studied; the esters of pentavalent P were found more stable than those of trivalent P. M. B. Sokolova participated in the experimental work.

Card 2/3

L 23327-66

ACC NR: AP6006974

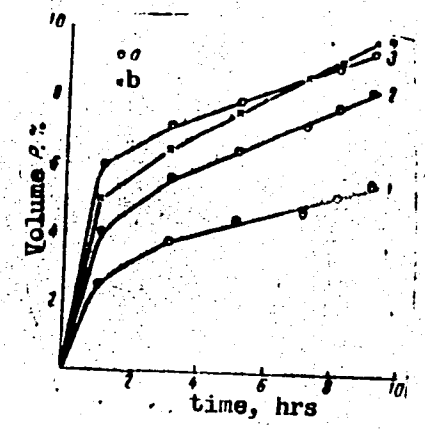


Fig. 1. Effect of the phosphorylation conditions upon the amount of phosphorus incorporated into the cellulose macromolecule (ratio 40): 1 - treatment at 80C; 2 - at 100C; 3 - at 120C. a - Phosphorylation with dimethylamide of ethylene glycol phosphite; b - phosphorylation with dimethylamide of propylene glycol phosphite.

Orig. art. has: 2 tables, 1 figure, and 11 equations.

SUB CODE: 07/ SUBM DATE: 15Feb65/ ORIG REF: 008/ OTH REF: 005

Card 3/3

VOLGINA, S.A.; KRYAZHEV, Yu.G.; ROGOVIN, Z.A.

Synthesis of telomers of acrylic acid and their use in the production of graft copolymers of cellulose with polyacrylic acid with predetermined length of a side chain. Vysokom.soed. 7 no.7:1154-1158 Jl '65. (MIRA 18:8)

1. Moskovskiy tekstil'nyy institut.

MORIN, B.P.; KRYAZHEV, Yu.G.; ROGOVIN, Z.A.

New method of introducing peroxide groups into polymer macromolecules used for the synthesis of graft copolymers. Vysokom. soed. 7 no.8:1463-1467 Ag '65. (MIRA 18:9)

1. Moskovskiy tekstil'nyy institut.

L 1142-66 EWT(m)/EPF(c)/EWP(j)/T/EWA(c) RPL WW/RM

ACCESSION NR: AP5022596

UR/0190/65/007/009/1529/1534
541.64+661.728+678.745

AUTHORS: Gulina, A. A.; Livshits, R. M.; Rogovin, Z. A.

TITLE: Synthesis of cellulose-polyacrylonitrile graft copolymers in the presence of the oxidation-reduction system cellulose - Fe^{2+} - H_2O_2. 2. Investigation of the influence of different initiation conditions on the coefficient of polymerization of polyacrylonitrile and on the degree of cellulose conversion

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 9, 1965, 1529-1534

TOPIC TAGS: polyacrylonitrile, polymer, resin, cellulose, copolymer, graft polymer

ABSTRACT: The factors influencing the coefficient of polymerization in the synthesis of cellulose-polyacrylonitrile graft copolymers and the effect of different initiating conditions on the degree of cellulose conversion have been studied. The synthesis was carried according to the method previously reported by the authors (Khimich. volokna, 1965, 3, 1965). The experimental results are shown graphically in Fig. 1 on the Enclosure. A mechanism for the synthesis of graft copolymers in the presence of cellulose- Fe^{2+} - H_2O_2 is proposed. It was found

Card 1/3

L 1142-66

ACCESSION NR: AP5022596

3

that the coefficient of polymerization of grafted polyacrylonitrile depends on the grafting method and that the degree of cellulose conversion in some cases reached the value of 80%. Orig. art. has: 1 table, 1 graph, and 7 equations.

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute) 44,55

SUBMITTED: 10Oct64 ENCL: 01 SUB CODE: OC, GC

NO REF SOV: 004 OTHER: 005

Card 2/3

L 1142-66

ACCESSION NR: AP5022596

ENCLOSURE: 01

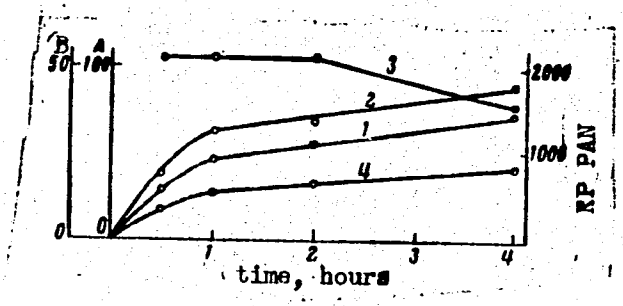


Fig. 1.

Influence of the extent of reaction on the quantity of graft on polyacrylonitrile (1), its conversion (4), coefficient of polymerization KP of grafted polyacrylonitrile PAN (3), and the degree of cellulose conversion (2). Reaction conditions: 60C, liquor ration 50, acrylonitrile concentration 3.5%, H_2O_2 concentration 0.003%. A- quantity of grafted polyacrylonitrile weight % in respect to cellulose, B- degree of cellulose conversion %

Card 3/3

L 1578-66 (A) EWT(m)/EPF(c)/EWP(j)/T RPL WW/RM

ACCESSION NR: AP5022602 UR/0190/65/007/009/1571/1575
541.644661.728+678.744

AUTHORS: Korotkova, A. Ya.; Rogovin, Z. A.

TITLE: Synthesis of cellulose-polymethylvinyl ketone graft copolymers

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 9, 1965, 1571-1575

TOPIC TAGS: polymer, copolymer, graft polymer, cellulose, polymethylvinyl ketone, light resistance, thermal stability, wear resistance

ABSTRACT: A cellulose derivative containing keto groups was obtained for the first time by the synthesis of cellulose-polymethylvinyl ketone graft copolymer. In comparison to the effect of various known grafting methods on the composition of the resulting copolymer, it was found that by using Cu^{+1} salts as a reducing agent the synthesis proceeded without the simultaneous homopolymer formation. The effect of various factors (temperature, reaction time, methylvinyl ketone concentration, bath ratio) on the graft copolymerization and on the composition of the resulting copolymer was investigated. Tabulated data show that a temperature increase up to 50C increases the polymethylvinyl ketone content in the copolymer. A further temperature increase does not cause any considerable increase of

Card 1/2

L 1578-66

ACCESSION NR: AP5022602

10

content. The composition of the graft copolymer is greatly affected by the monomer concentration in the aqueous solution under the following conditions: 80C, one hour of reaction time, bath ration 50, (CuCl) = 1 mole/mole NH_2 group, and a nitrogen content of 0.495% in the alkylated cellulose. Some properties (light resistance, thermal stability, and wear resistance) of the graft copolymers were investigated. It was established that the introduction of keto groups into the cellulose macromolecule increases considerably the light fastness but strongly decreases the thermal resistance of the modified cellulose fabrics. The wear strength of the original and of the graft copolymer fabrics is the same. The preparation of graft copolymers and the determination of the keto group content in the copolymer are briefly described. The authors thank Ye. G. Karapetyan for supplying the monomer. V. V. Larin took part in the experiments. Orig. art. has: 5 tables.

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 17Oct64 ENCL: 00 SUB CODE: GC, OC

NO REF SOV: 005 OTHER: 001

Card 2/2

IVANOV, N.V.; BOKOVIN, Z.A.; NGUYEN VIN' CHI

Synthesis of silicon-containing cellulose ethers. Izv. vys. ucheb. zav.; khim. i khim. tekh. 8 no.1:124-126 '65. (MIRA 18:6)

1. Moskovskiy tekstil'nyy institut, kafedra khimicheskikh volokon.

GULINA, A.A.; KRYAZHEV, Yu.G.; ROGOVIN, Z.A.

Synthesis and analysis of the properties of the graft polymer of cellulose and polystyrene. Izv.vys.ucheb.zav.; khim. i khim.tekh. 8 no.2:291-296 '65. (MIRA 18:8)

1. Moskovskiy tekstil'nyy institut, kafedra khimicheskikh volokon.

L 30710-66 EWF(j)/EWT(l)/EWT(m)/T RM
ACC NR: AT5028989 SOURCE CODE: UR/0342/65/000/009/0031/0032

AUTHORS: Mal'tseva, T. A. (Aspirant); Virnik, A. D. (Senior research associate); Rogovin, Z. A. (Professor); Shcheglova, G. V. (Aspirant); Vashkov, V. I. (Professor, Director)

ORG: Mal'tseva, Virnik, Rogovin (Moscow Textile Institute -- Moskovskiy tekstil'nyy institut); Shcheglova, Vashkov (Central Scientific Research Disinfection Institute -- Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut)

TITLE: Antibacterial synthetic fibers and cloths

SOURCE: Tekstil'naya promyshlennost', no. 9, 1965, 31-32

TOPIC TAGS: textile, textile industry, bacteria, bactericide, silver

ABSTRACT: Antibacterial synthetic fibers were obtained by treating modified fibers of polyvinylalcohol, cloth made from modified polypropylene fibers, and jersey cloth made from modified capron fibers with the following bactericides: silver, N-cetylpyridinal terramycin, streptomycin, and hexachlorophene. The effectiveness of the treatment was determined by the effect it had on golden staphylococcus and Escherichia coli bacteria. The experimental procedure

Card 1/2 UDC: 677:615.799.9

Card 2/2 LS

L 30710-66
ACC NR: AP5028989

followed that described previously by the authors (Tekstil'naya promyshlennost' 1965, 4, str. 15). The results are tabulated. It is concluded that fabrics may be made impervious to bacterial action by treating them with a suitable bactericide. Orig. art. has: 1 table.

SUB CODE: 11/ SUBM DATE: none/ SOV REF: 002

Card 2/2 LS

ACC NR: AP7005629 (A) SOURCE CODE: UR/0413/67/000/002/0086/0087

INVENTOR: Rogovin, Z.A.; Tyuganova, M.A.; Gabrielyan, G.A.

ORG: none

TITLE: Preparative method for nonburning nitrile group—containing polymers and copolymers. Class 39, No. 190564

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1967, 86-87

TOPIC TAGS: fire resistant material, polymer, copolymer, organic phosphorus compound, ORGANIC NITRILE COMPOUND

ABSTRACT: An Author Certificate has been issued for a method of preparing nonburning nitrile group-containing polymers and copolymers, involving their treatment with dimethyl hydrogen phosphite in the presence of such catalysts as diethyl- or triethylamine. The phosphite can be used in the form of a solution in an organic solvent. [BO]

SUB CODE: 11, 07/ SUBM DATE: 08Dec64/ ATD PRESS: 5115

Card 1/1 UDC: 677.499.862.516.22 :546.183

L 00000-07 EWT(m)/EWT(j) IJP(c) WW/RM

ACC NR: AP6002209 (A) SOURCE CODE: UR/0153/65/008/005/0825/0828

AUTHOR: Morozov, V. A.; Sharova, V. V.; Livshits, R. M.; Malakhov, R. A; Rogovin, Z. A.

ORG: Moscow Textile Institute, Department of Chemical Fibers (Moskovskiy tekstil'nyy institut, Kafedra khimicheskikh volokon)

TITLE: Synthesis of graft copolymers of polyvinyl alcohol and methylacrylate in the presence of tetravalent cerium salts

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 8, no. 5, 1965, 825-828

TOPIC TAGS: graft copolymer, polyvinyl alcohol, cerium compound, hydroquinone, acetone

ABSTRACT: The synthesis of graft polyvinyl alcohol copolymers is based on the fact that the oxidation of hydroxyl-containing polymers by Ce^{4+} passes through the formation of free macroradicals capable of initiating the graft copolymerization of monomers contacting vinyl. To avoid the formation of homopolymers, the synthesis time selected was smaller than the induction period of monomer homopolymerization. Polyvinyl alcohol, completely soluble in water, was used in the experiments. The necessary amount of monomer was poured into an aqueous solution of polyvinyl alcohol, and a homogeneous solution or emulsion of methylacrylate was obtained, after shaking, at monomer concentration > 0.446 mole/l. The mixture was thermostated at a definite temperature and

Card 1/2

L 08905-67

ACC NR: AP6002209

0.1 N solution of Ce ammonium nitrate in 1 N HNO_3, thermostated at the same temperature, was poured into the mixture. The reaction was stopped by the addition of hydroquinone. The mixture was then poured into acetone, taken in 20-30-fold excess amount, and, after precipitation, filtered out and dried. The composition of the graft copolymer was determined from the saponification number. A complete conversion of the monomer occurred at the end of 1 hr at 20C and under the following conditions: concentration of 5.0×10^{-2} mole/l Ce^{4+}, 0.5575 mole/l methylacrylate, 0.1 mole/l HNO_3, and 5% polyvinyl alcohol. The copolymer contained 50.3% polyvinyl alcohol and 49.7% polymethylacrylate. The amount of graft polyvinyl alcohol copolymer increased with increased concentration of Ce^{4+} regardless of temperature (5, 10, and 20C) and the duration of the reaction (2 and 1 hr). An increase in the temperature and in the amount of methylacrylate increased the rate of graft copolymerization, but the amount of graft copolymer depended very little on the acid concentration. The properties of synthesized graft copolymers will be discussed in the next paper. Orig. art. has: 2 fig. and 3 tables.

SUB CODE: 07/ SUBM DATE: 16Nov63/ ORIG REF: 002/ OTH REF: 004

Card 2/2

L 15140-66 EWT(m)/EWP(j)/T RM

ACC NR: AP6022725 (A) SOURCE CODE: UR/0183/66/000/002/0049/0051

AUTHOR: Nepochatykh, V. I.; Rogovin, Z. A.; Finger, G. G.; Mogilevskiy, Ye. M. 48

ORG: [Nepochatykh, Rogovin] MTI; [Finger, Mogilevskiy] VNIIV 44

TITLE: Production of copper xanthate fiber 15 B

SOURCE: Khimicheskiye volokna, no. 2, 1966, 49-51

TOPIC TAGS: synthetic fiber, xanthic acid, bactericide, wood chemical product, copper compound, organic sulfur compound, cellulose plastic, synthetic fiber, copper compound

ABSTRACT: The authors used available data on the change occurring in the stability of cellulose xanthate in accordance with the nature of the cations contained in the salts to investigate the possibilities of manufacturing a fiber made of cellulose copper xanthate in order to study the basic properties of this fiber and to determine the fields in which practical use could be made of it. While production of the fiber is possible using a single bath, the use of the process proved to be undesirable because the copper sulfate in the precipitating bath entered an exchange reaction not only with the sodium xanthate, but with the sulfur compounds in the viscose as well. Copper consumption was increased and the fiber obtained was dirty. Use of two baths was resorted to and was found to be quite simple and caused no complications in the technological process. The first bath contained sodium sulfate and sodium bicarbonate or sulfate of ammonia, and was used to coagulate the viscose. After washing in a Na_2SO_4 solution the

Card 1/2 UDC: 677.467

ORIG REF: 005 / OTH REF: 003

L 46144-66 EWT(m)/EWP(j)/T IJP(c) WW/RM
ACC NR: AP6026737 (A) SOURCE CODE: UR/0183/66/000/003/0027/0030

AUTHOR: Rogovin, Z. A.; Tyuganova, M. A.; Gabrielyan, G. A.; Konnova, N. F.

ORG: MTI

TITLE: Preparation of fireproof viscose and polyacrylonitrile fibers

SOURCE: Khimicheskiye volokna, no. 3, 1966, 27-30

TOPIC TAGS: polyacrylonitrile, synthetic fiber, cellulose, cellulose plastic, heat resistant material

ABSTRACT: Preparation of fireproof phosphorus-containing fibers by means of a base catalyzed reaction of dimethylphosphite with aldehyde groups containing modified cellulose and polyacrylonitrile was studied. In the case of modified cellulose, the reaction temperature was 80-120°C, its duration was 1-4 hours, the catalyst [$HN(C_2H_5)_2$, $N(C_2H_5)_3$, solid NaOH, 30%-aqueous NaOH, or 23%-NH_4OH] concentration was 1 wt % based on the starting total charge, and the starting dialdehydecellulose contained 5.96% aldehyde groups. The phosphorus content in the product was 0-7.6% and the degree of aldehyde group utilization was 25-70%. Similar reaction conditions were also used in the reaction of dimethylphosphite with modified polyacrylonitrile. The product structures were confirmed by the IR spectroscopy. The product fibers with phosphorus contents greater than 3.5 wt % were found to be incombustible and fire-resistant. It

UDC: 677.46.021.212

Card 1/2

L 46144-66

ACC NR: AP6026737

was also found that the product fiber had excellent mechanical properties (tensile strength and elasticity). Orig. art. has: 2 figures, 3 tables.

SUB CODE: 07/ SUBM DATE: 26Mar65/ ORIG REF: 003/ OTH REF: 001

Card 2/2

L 41332-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6013276 SOURCE CODE: UR/0413/66/000/008/0078/0078

INVENTOR: Rogovin, Z. A.; Tyuganova, M. A.; Zharova, T. Ya.; Levin, B. B.; Fetin, I. N.

ORG: none

TITLE: Preparation of graft copolymers of cellulose and phosphorus-containing monomers. Class 39, No. 180792

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 8, 1966, 78

TOPIC TAGS: copolymer, graft copolymer, monomer, cellulose, primary aromatic amine, heat resistant material

ABSTRACT: This Author Certificate introduces a method for obtaining graft copolymers of cellulose and phosphorus-containing monomers by introducing aromatic amines into the cellulose molecule and subsequently converting them to diazo groups.

Card 1/2 UDC: 677.46:678..029.65:66.095.834 66.095.2

L 44138-66

ACC NR: AP6013276

To extend the variety of heat-resistant and ion-exchange materials, α-phenylvinyl-phosphinic acid is suggested as the phosphorus-containing monomer. [LD]

SUB CODE: 11,07/SUBM DATE: 27Feb65/

Card 2/2

L 36371-66 EWP(j)/EWT(m)/T RM/WW

ACC NR: AP6009879 (A) SOURCE CODE: UR/0413/66/000/004/0070/0070

INVENTOR: Gulina, A. A.; Domiteyeva, I. A.; Livshits, R. M.; Rogovin, Z. A.

ORG: none

TITLE: Preparation of graft copolymers. Class 39, No. 178987

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966, 70

TOPIC TAGS: copolymer, graft copolymer, redox system, vinyl monomer

ABSTRACT: An Author Certificate has been issued describing a method of preparing graft copolymer in the presence of the redox system: metal of variable valence and oxidizer. To increase the reaction rate and lower the reaction modulus and temperature, the process is conducted in aqueous emulsions of the monomer in the presence of an emulsifier. [LD]

SUB CODE: 11/ SUBM DATE: 14Nov64

Card 1/1 UDC: 677.862.25

L 29667-66 EWT(m)/EWP(j)/T RM/GD-2

ACC NR: AT6000962 (A) SOURCE CODE: UR/0280/65/000/0[illegible]/0046

AUTHORS: Rogovin, Z. A.; Vashkov, V. I.; Shluger, B. A.; Virnik, A. D.; Shcheglova, G. V.; [illegible]; Nesmeyanov, A. I.

ORG: none

TITLE: A method for obtaining bactericidal fabrics and fibers based on cellulose. Class 29, No. 176263

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 2, 1965, 46

TOPIC TAGS: bactericide, cellulose, biologic protective clothing

ABSTRACT: This Author Certificate presents a method for obtaining bactericidal fabrics and fibers based on cellulose, by the introduction of ionogenic groups and subsequent substitution with bactericidally active substances. To impart antimicrobic properties to the cellulose fabric (fiber), the latter is treated with the derivatives of hydroxi- or aminosulfo acids capable of reacting chemically with cellulose during their interaction with the bactericidally active substances. These substances may be salts of heavy metals or quaternary ammonium bases.

SUB CODE: 13,06 SUBM DATE: 18Oct62

Card 1/1 UDC: 677.46:615

L 37201-66 EWT(m)/EWP(j)/T IJP(c) RM/WW

ACC NR: AP6012415 (A) SOURCE CODE: UR/0183/65/000/006/0013/0016

AUTHOR: Gabriyelyan, G. A.; Stanchenko, G. I.; Rogovin, Z. A.

ORG: MTI

TITLE: Preparation and properties of fibers from acrylonitrile-diketene copolymer

SOURCE: Khimicheskiye volokna, no. 6, 1965, 13-16

TOPIC TAGS: synthetic fiber, acrylonitrile, copolymerization, chemical reaction, tensile strength, rupture strength, elongation

ABSTRACT: Fibers were formed by the wet method from solutions of acrylonitrile-diketene copolymers in dimethylformamide. Copolymers of 40,000-45,000 molecular weight and containing 4-6 mol % diketene on the weight of the copolymer gave most stable solutions from which fibers having 7-8% elongation were formed. Different types of reactive groups were introduced by treating the fibers with hydroxylamine or hexamethylenediamine (HMDA). Introduction of amine or hydroxylamine groups enabled the fibers to be dyed with acid dyes. Chemically dyed fibers were obtained by reacting the copolymer fibers with HMDA and dyes containing amino groups. Subsequent treatment of acrylonitrile-diketene copolymer fibers with HMDA significantly increased the zero-

UDC: 677.745.32

Card 1/2

L 41334-65 EWT(m)/EWP(j)/T RM

ACC NR: AP6025617 SOURCE CODE: UR/0413/66/000/013/0075/0075

AUTHORS: Sergeyeva, L. M.; Rogovin, Z. A.

ORG: none

TITLE: A method for imparting insolubility to polyvinyl alcohol fiber. Class 39, No. 183374

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 75

TOPIC TAGS: polyvinyl alcohol, synthetic fiber, polymer cross linking

ABSTRACT: This Author Certificate presents a method for imparting insolubility to polyvinyl alcohol fiber by treating it with a cross-linking agent. To increase the fiber's resistance to the action of concentrated acids and bases, epichlorhydrin is used as the cross-linking agent. Either a concentrated or a water-acetone dilute alkali solution may be used as a catalyst for the cross-linking reaction. The fiber may be treated with the alkali solution prior to treatment with the cross-linking agent.

[04]

SUB CODE: 07/ SUBM DATE: 17Aug63/ ATD PRESS: 5058

Card 1/1 11b UDC: 677.494.744.72:677.862.522:66.062.539

CA

The shrinkage of viscose rayon. A. A. Rogovina. *Tekstil. Prom.* **8**, No. 1, 29-31(1948); *Chem. Zentr.* (Russian Zone Ed.) **1948**, II, 1245-6.—Shrinkage was detd. by optical methods. The limit of error was 0.02-0.04%. Long storage at 18-20° and a relative humidity of 65% reduced the shrinkage of dry-stretched viscose rayon 30-50%. By soaking artificial silk 5 min. to 24 hrs. at 18-100° the amt. of lengthening was reduced by 80-90%. When the stretching was repeated after soaking and drying once, a residual stretch of 0.2-0.4% remained. Rayon lengthens about 5-7% in water. When the dry fibers were stretched more than 7% before being placed in water, no lengthening occurred, but rather a shrinkage. When material was soaked and then stretched for 1 hr. under a load of 50 g. the subsequent shrinkage was 24.6%. Thus the greater the stretching while dry, the greater the subsequent shrinkage when wet. When the material was stretched while wet and then dried without tension, there was no appreciable shrinkage during repeated washings.

M. G. Moore

DEMINA, Natal'ya Vasil'yevna; MOTORINA, Aleksandra Vasil'yevna; NOVIKOV, Nikolay Alekseyevich, kand.tekhn.nauk; NOVIKOVA, Sof'ya Aleksandrovna; NENCHENKO, Eleonora Adol'fovna, kand. tekhn. nauk; PANFILOVA, Mariya Mikhaylovna; ROGOVINA, Alisa Aleksandrovna, kand. tekhn. nauk; ROMANOVA, Lyubov' Stepanovna; TALYZIN, M.D., kand. tekhn. nauk, retsenzent; VERBITSKAYA, Ye.M., red.

[Methods of physicomechanical testing of synthetic fibers, threads and films] Metody fiziko-mekhanicheskikh ispytanii khimicheskikh volokon, nitei i plenok. Moskva, Legkaia industriia, 1964. 352 p. (MIRA 18:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennykh volokon (for all except Talyzin, Verbitskaya).

VASIL'YEV, Yu.V.; ROGOVINA, A.A.

Studying the development of cracks in polyamide yarn under dynamic fatigue conditions. Khim.volok.no.5:59-62 '64. (MIRA 17:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut steklyannogo volokna (for Vasil'yev). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (for Rogovina).

Rogovina, A. A.

USSR

Nature of the breaking of a fiber. V. V. Linde and A. A. Rogovina. *Zhur. Tekh. Fiz.* 23, 1144-8(1953).—The difference between the actual strength of textile fibers and the strength calcd. from intramol. reaction energies is explained by the micro- and macro-inhomogeneities in the fibers. A series of microphotographs is presented for the breaking-sites for viscous rayon, raw silk, and capron fibers. These photographs show that the fracture did not occur simultaneously throughout the cross-section of the fiber, but by degrees and therefore the total strength of the fiber is not completely used.
J. Rovtar Lench

ROGOVINA, A.A., kandidat tekhnicheskikh nauk.

Effect of thread structure on the properties of viscose cord.
Tekst.prom. 16 no.5:45-48 My '56. (MLRA 9:8)
(Textile fibers, Synthetic)

ROGOVINA, A.A.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1822
AUTHOR ROGOVINA,A.A., DAVIDOVIĆ,N.I., NEBYLICYN,B.F., NIKITIN,V.V., KARGIN,V.A.
TITLE The Study of the Behavior of Tire Tissues if Subjected to Percussion.
I. Pendulum-Ram for the Testing of Tissue-(Cord)Fibres.
PERIODICAL Žurn.techn.fis, 26, fasc.12, 2684-2689 (1956)
Issued: 1 / 1957

A large number of automobil tires are damaged after a very small mileage because the outer cover is destroyed by contact with some obstacle. In order to study the behavior of the tissue when subjected to such an impact, a pendulum-ram was constructed. The ballistic dynamometer by GUDBRANDT, which is usually used in practice, has a number of essential faults. These faults can be eliminated by separating the holding device from the pendulum. This may be attained in two ways: these impact tests were carried out on the stationary and immobile sample, which is held in a position vertical to the oscillation plane of the pendulum. The essential difference between the method of testing the tissue by means of a pendulum-ram on the one hand and that on the ballistic dynamometer on the other consists in the fact that, in the first case, the velocity of the deformation of the fibre grows during the process of expansion, whereas in the second case it remains nearly constant. The construction scheme and a photo of the pendulum ram is shown. The values obtained for elongation by tearing are more or less approximative values, because the actual amounts of these elonga-

tions of individual fibres remain unknown. The values obtained are shown in form of a table. By means of the pendulum ram the following tests can be carried out: Determination of the tearing characteristics of the cord subjected to impact and/or several impacts. In the course of the process the following quantities can be determined: the amount of energy needed for tearing the fibre; the amount of the elongation of the fibre; the duration of impact and, in the case of several impacts, also the number of impacts as well as the quantity of the common remaining and elastic deformations.

INSTITUTION: The Scientific Research Institute of the Automobile Tire Industry, Moscow.

ROGOVINA, A.A.

CARD 1 / 2 PA - 1823

SUBJECT USSR / PHYSICS
AUTHOR ROGOVINA, A.A., KARGIN, V.A.
TITLE The Study of the Behavior of Tire-Tissues when subjected to Impacts. II. Resistance when subjected to Impact Stress.
PERIODICAL Žurn.techn.fis, 26, fasc.12, 2690-2704 (1956)
Issued: 1 / 1957

The task to be fulfilled by the present work was essentially to determine the qualitative difference in the behavior of cord in the case of impact-tests on the one hand, and of normed dynamometric tests on the other. For this purpose parallel tests were carried out with tire-cords on the dynamometer and on the pendulum ram. These tests were carried out with the most important types of viscose-, cotton-, and capron cords. In order to determine the influence exercised by humidity on cord, tests were carried out with air-dried fibres as well as with such as had been dried and had a humidity of 1-2%. In order to determine the influence exercised by temperature fibres were examined after previously being dried (humidity 1-2%) at 20 and 100°. It was found that the modification of the expansion velocity by 5 $mm.sec^{-1}$ up to some $m.sec^{-1}$ changes the amount of the elongation by tearing of the cord and the character of the deformations only very little. In spite of the effect which is practically instantaneous, stress by impact leads to the formation of considerable rest-changes. Hereby, however, the greater part of the work by expanding is transformed into heat in the case of cotton- and viscose cords within those ranges which approach the stage of deformation by tearing. The incessant increase of rest-elongations in

Zurn.techn.fis,26, fasc.12, 2690-2704 (1956) CARD 2 / 2 PA - 1823

the case of repeated impacts causes fibres to tear within a comparatively short time in the case of repeated stress by impact. Tests showed that in an inflated tire viscose- and cotton cord covers are able to work for some considerable time in the case of an expansion which must, however, not exceed 2-3%. The durability of capron cord is considerably higher. Stress by impact when tearing cord is greater than static stress. In the case of cotton- and viscose cord this difference is from 1.5 to double the amount, and in the case of capron cord it is from 5 to 30%. The increase of working output in the case of a tearing of the fibre as a result of impact is effected essentially at the expense of an increase of the strength of the fibre. It was found that in the case of rapidly carried out tests the relaxation processes which cause a weakening of the fibre in the case of slow expansion have in this case not enough time to enter fully into effect. This is the main reason for the increase of strength in the case of impact. With a certain type of cord, and in the case of certain test conditions, there exists a direct correlation between the results obtained by impact- and dynamometric tests. Impact tests are more sensitive with respect to the modification of the mechanic properties of the cord than dynamometric ones.

INSTITUTION: Scientific Research Institute of the Tire Industry, Moscow.

KOGOVIN, A. A., and KARGIN, V. A.

"Impact strength of textile yarns," a paper presented at the 9th Congress on the Chemistry and Physics of High Polymers, 28 Jan-2 Feb 57, Moscow, Textile Research Inst.

B-3,084,395

15-2

4950. Treatment of viscose cord in the tyre industry. A. A. Bogovin. Kauch. i Rezina, 1957, 16, No. 3, 18-21. The author surveys the alteration in the mechanical properties of viscose cord during the manufacture of tyre covers. There are 5 references. 66A311322.342

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ROGOVINA, A.A.

ROGOVINA, A.A., kand.tekhn.nauk

Structure of rayon cord. Tekst.prom. 18 no.4:40-42 Ap '58. (MIRA 11:4)
(Rayon) (Tire fabrics)

KOKOVIN, F.I.

Changes in cord properties during dynamic and static fatigue. (MIRA 18:10)
Khim. volok. no.5:51-54 '65.

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

ROGOVINA, A.A.; KUZNETSOVA, R.Ye.

Changes in the characteristics of nylon cord in water soaking and subsequent drying. Khim. volok. no.4:56-59 '65. (MIRA 18:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

ROGOVINA, A.A.; NOVIKOVA, S.A.; GIL'MAN, I.S.; VASIL'YEV, Yu.V.

Some structural changes in polyamide fibers occurring during heating and dynamic fatigue. Khim. volok. no.4:56-60 '64. (MIRA 18:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (for Rogovina, Novikova). 2. Moskovskiy tekstil'nyy institut (for Gil'man, Vasil'yev.).

ROGOVINA, A.A.; VASIL'YEV, Yu.V.; YEVREINOV, Yu.V.

Study of the process of the development of defects in fibers during static fatigue and stretching. Khim. volok. no.6:60-4 '64. (MIRA 18:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (for Rogovina). 2. VNIISV (for Vasil'yev). 3. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. Lomonosova (for Yevreinov).

ROGOVINA, A.A.; KUZNETSOVA, R.Ye.

Change in the properties of viscose cord undergoing water wetting and subsequent drying. Khim. volok. no.3:45-50 '64.
(MIRA 17:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

ROGOVINA, A.A.

Studying the causes of fatigue destruction of automobile tire cord. Izv.vys.ucheb.zav.; tekh.tekst.prom. no.1:34-38 '63. (MIRA 16:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Tire fabrics—Testing)

ROGOVINA, A.A., NOVIKOVA, S.A., GIL'MAN, I.S., VASIL'YEV, YU.V.

Some structural changes of polyamide fibers on heating and dynamic fatigue.

Report presented at the 13th Conference on high-molecular compounds Moscow, 8-11 Oct 62

EYZENSHTEYN, E. M.; ROGOVINA, A. A.

Eighth Conference on Macromolecular Compounds. Khim. volok. no.6:75-77 '62. (MIRA 16:1)

(Macromolecular compounds—Congresses)

S/183/62/000/006/002/002
B101/B186

AUTHORS: Eyzenshteyn, E. M., Rogovina, A. A.

TITLE: 13th Conference on High-molecular Compounds

PERIODICAL: Khimicheskiye volokna, no. 6, 1962, 75 - 77

TEXT: The 13th konferentsiya po vysokomolekulyarnym soyedineniyam (Conference on High-molecular Compounds) was held in Moscow on October 8-11, 1962. It was attended by 1600 scientists, engineers, and designers from more than 280 scientific research institutes, universities, industrial establishments, and planning and designing organizations concerned with various branches of industry. The conference dealt with the mechanical properties of polymers. Over 150 reports were presented. In the present survey the reports of interest to experts of the man-made fiber industry are listed. In his opening speech, Academician A. V. Topchiyev, Vice-president of the AS USSR, stressed the importance of polymers for the national economy. Three reports were delivered at the plenary meeting: V. A. Kargin, Academician, "Structure and mechanical properties of polymers"; G. L. Slonimskiy, "High elasticity of polymers"; G. M. Bartenev, "Nature and laws of polymer flow". It has been stated

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that the statistical theory of the convoluted polymer molecule does not satisfactorily explain the mechanical properties of polymers; a relationship has to be established between these properties and the supermolecular structures both in the equilibrium and in the nonequilibrium states. The polymer rheology should be concerned with the study of molecular structures and their destruction, and with the various forms of flow and the transition from mechanical to chemical flow. The conference worked in five sections: (1) theoretical fundamentals of elasticity, plasticity, and strength of polymers; (2) mechanical properties of polymers; (3) physicomechanical fundamentals of polymer processing; (4) methods of mechanical testing; (5) glass-reinforced plastics. In section 1, 36 reports were presented and 57 persons took part in the discussions. The main problem was the fluctuation theory of strength as developed in recent years by S. N. Zhurkov, Corresponding Member AS USSR, and collaborators, at the Fiziko-tekhnicheskiy institut AN SSSR (Physicotechnical Institute AS USSR). Reports: V. R. Regel', T. M. Muinov, and O. F. Pozdnyakov, "Application of mass spectrometry to investigate the mechanical destruction of polymers"; A. M. Leksovskiy and V. R. Regel', "Study of static and dynamic fatigue of polymers"; S. A. Abasov and S. N. Zhurkov reported on relations between the degree of polymerization and the strength of

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oriented and non-oriented caprone fibers. A. D. Chevychelov and A. I. Gubanov spoke abqut a "Precise formulation of the kinetic theory of polymer strength" and "Bond and cohesive energy in polymers"; A. I. Meos and M. N. Vishnyakova (Leningradskiy tekstil'nyy institut - Leningrad Textile Institute), "Electron-microscopic study of the supermolecular structure of some chemical fibers"; V. A. Marikhin, S. N. Zhurkov, and L. P. Romankova, "Electron-microscopic study of the supermolecular structure of polymers on cleavage surfaces"; I. I. Novak, S. N. Zhurkov, and V. I. Vetegren', "Study of orientation and crystallization of caprone fibers by infrared microscopy"; L. I. Nadareyshvili and T. I. Sogolova (Fiziko-khimicheskiy institut im. L. Ya. Karpova - Physicochemical Institute imeni L. Ya. Karpov), "Study of supermolecular structures of gutta-percha"; G. P. Andrianova and V. A. Kargin (Institut neftekhimicheskogo sinteza AN SSSR - Institute of Petrochemical Synthesis AS USSR), "Effect of microscopic structures on the mechanical behavior of isotactic polypropylene"; V. Ye. Gul', V. V. Kovriga, and A. M. Vasserman (Moskovskiy institut tonkoy khimicheskoy tekhnologii - Moscow Institute of Fine Chemical Technology), "Effect of supermolecular structures on the strength of polypropylene"; N. F. Bakeyev, P. V. Kozlov, and G. N. Kardash (MGU), "Effect of the morphology of spherulite structures on the

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properties of the mechanical behavior of crystalline polymers; A. I. Slutsker and A. Ye. Gromov (Physicotechnical Institute AS USSR), "Study of orientation in polymer fibers by the x-ray diffraction method"; L. G. Kazaryan, D. Ya. Tsvankin, and L. Z. Rogovina (Institut elementoorganicheskikh soyedineniy AN SSSR - Institute of Elemental Organic Compounds AS USSR), "Study of the orientation process during deformation of polypropylene"; T. A. Shamrayevskaya, Yu. N. Lesnichiy, N. A. Shchegolevskaya, and S. I. Sokolov (Moskovskiy institut khimicheskogo mashinostroyeniya - Moscow Institute of Chemical Machinery), "Study of the conditions for mutual compensation of the effects due to positive and negative birefringence"; M. F. Milagin and N. I. Shishkov (Physicotechnical Institute AS USSR), "Birefringence and strength of polymers"; P. V. Kozlov, V. G. Timofeyeva, and V. A. Kargin (MGU, NIKFI), "Effect of small admixtures of low-molecular substances on the mechanical properties of rigid chain polymers"; A. I. Suvorova and A. A. Tager (Ural'skiy gosudarstvennyy universitet im. A. M. Gor'kogo - Ural State University imeni A. M. Gor'kiy), "Effect of chemical structure and dimension of plasticizer molecules on the vitrification temperature of polymers"; L. Z. Rogovina and G. L. Slonimskiy (Institute of Elemental Organic Compounds AS USSR), "Study of stress relaxation processes in crystalline and

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amorphous polymers". Section 2: Kh. U. Usmanov, M. S. Nigmakhodzhayeva, M. Alimbekov, and I. Kh. Khakimov (Institut khimii polimerov AN UzSSR - Institute of Polymer Chemistry AS UzSSR), "Study of mechanical and thermodynamical properties of cellulose in organic solvents"; G. N. Kukin gave a survey on the mechanical properties of textile fibers; N. I. Naymark (MTI), "Some peculiarities of the deformation of cotton yarn"; A. A. Rogovina, S. A. Novikova, I. S. Gil'man, and Yu. V. Vasil'yev (VNIIV, MTI), "Some structural changes of polyamide fibers on heating and dynamic fatigue"; V. A. Berestnev, I. P. Nagdaseva, M. B. Lytkina, Z. I. Suleymanova, A. V. Orlova, and L. S. Dubova (NIIShP), "Study of the relationship between mechanical properties and structure of cord fibers"; M. P. Vershinina, V. R. Regel', and N. N. Chernyy (Physicotechnical Institute AS USSR), "Effect of UV radiation on the kinetics of flow and destruction of caprone fibers". In the resolution adopted by this section the development of research on the mechanical properties of textile fibers was described as unsatisfactory, which was drawn to the attention of the Komitet Soveta Ministrov SSSR po koordinatsii nauchno-issledovatel'skikh rabot (Committee of the USSR Council of Ministers for the Coordination of Scientific Research Work). Section 3: 36 reports were delivered and 60 persons took part in the discussions. Professor G. V. Vinogradov

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gave a survey of the basic problems of theory and testing methods in the study of polymer rheology. R. A. Baltenas and L. A. Igonin (NIIplastmass), "Study of the effect of high pressures on melting temperature and viscosity of polyethylene melts"; Z. G. Povarova (NIIRP), "Viscosimetric method of determining structural changes of polymers when processed at various temperatures and pressures "; I. V. Konyukh, I. M. Belkin, and E. Mustafayev (Institute of Petrochemical Synthesis AS USSR), "Rotation viscosimetry of polymer melts"; N. V. Prozorovskaya, "Capillary viscosimetry of polymer melts"; A. A. Konstantinov and I. V. Konyukh, "Automatic capillary viscosimeter АКВ-5 (AKV-5)"; M. P. Zabugina, I. V. Konyukh, A. A. Konstantinov, "Capillary microviscosimeter for polymer melts"; R. V. Torner (NIIShP), "Basic trends in the development of extruders for processing thermoplastic materials"; V. I. Morozov, B. P. Shtarkman, and Ye. I. Rylov, "Physicomechanical fundamentals of polymer processing by screwless extruders"; V. Ye. Dreval' and A. A. Tager (Ural State University imeni A. M. Gor'kiy), "Study of the rheological properties of concentrated solutions of welastic, glassy, and crystalline polymers as a function of concentration, temperature, and type of solvent"; S. A. Glikman, V. M. Aver'yanova, and L. I. Khomutova (Saratovskiy gosudarst-

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vennyy universitet im. N. G. Chernyshevskogo - Saratov State University imeni N. G. Chernyshevskiy), "Mechanical properties and structure of acetyl cellulose spinning solutions"; E. A. Pakshver (VNIISV), "Rheological (viscous) properties of viscose solutions". Reports delivered by collaborators of IVS AN SSSR: S. Ya. Frenkel', L. G. Shaltyko, L. N. Korzhavin, and L. M. Pyrkov, "Use of active media for shaping and strengthening synthetic fibers"; L. M. Pyrkov, A. Ya. Sorokin, and S. Ya. Frenkel', "Application of the principle of active media to produce high-strength fibers from polyvinyl alcohol"; G. N. Afanas'yeva, A. I. Meos, and L. A. Vol'f (Leningrad Textile Institute) spoke on a "Method of producing high-strength polyvinyl alcohol fibers" by which strengths of 80 - 100 km and elongations of 8 - 10 % have been reached. B. Ye. Geller, S. I. Slepakova, and E. Z. Zakirov (Tashkentskiy tekstil'nyy institut - Tashkent Textile Institute), "The role of the mobility of macromolecules in the network formation process in the formation of carbochain fibers". Section 4: 31 reports were delivered and about 30 persons took part in the discussions. They dealt with: problems of testing at high deformation rates under complex stress conditions at high temperatures; automation of testing. L. P. Rudakov reported on an automatic dynamometer developed in the IVS AN SSSR for testing fibers; F. Kh. Sadykova (MTI) on

a safe and simple method for determining the Poisson coefficient in textile fibers; Professor A. N. Sokolov (MTI), "Determination of the toughness of textile fabrics in stretching"; L. A. Layus (AS USSR) stated that in testing samples oriented by stretching the stress-temperature curves supplied better information on orientation than birefringence. N. A. Dyurich, A. Ye. Yel'kin, and V. V. Lavrent'yev (MGPI im. V. I. Lenina - MGPI imeni V. I. Lenin) reported on new apparatus and methods for determining the friction coefficient of polymers. Yu. G. Yanovskiy, G. M. Vinogradov, S. K. Krashennikov, V. S. Shifman (Institute of Petrochemical Synthesis AS USSR), and G. K. Demishev, Yu. V. Zelenov (MGPI imeni V. I. Lenin) spoke on apparatus for testing polymers with audiofrequencies. V. V. Kovriga (Moscow Institute of Fine Chemical Technology) reported on an apparatus for plotting the stress-deformation curve in one-dimensional stretching at a velocity of 25 - 30 m/sec within a wide temperature range. Section 5: 14 reports were delivered concerning theoretical and experimental studies of the mechanical properties of glass-reinforced plastics. An elaborate resolution was adopted at the final plenary meeting.

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ROGOVINA, A.A.; VASIL'YEV, Yu.V.

Effect of atmospheric oxygen on the mechanism of fatigue failure of a capron cord. Khim.volok. no.5:50-54 '61. (MIRA 14:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna. (for Rogovina). 2. Moskovskiy tekstil'nyy institut (for Vasil'yev).

(Nylon--Testing)

ROGOVINA, A.A.; VASIL'YEV, Yu.V.

Resistance of a cord made of certain kinds of synthetic fibers to multiple dynamic deformations. Khim.volok no.4:63-68 '62. (MIRA 15:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (for Rogovina). 2. Moskovskiy tekstil'nyy institut (for Vasil'yev).

(Textile fibers, Synthetic--Testing)

KONKIN, A.A.; [illegible], C.Ye.

Present state and prospects for the production of tire cord. Khim. volok. no.1: [illegible]. (MIRA 14:2)

1. Moskovskiy tekstil'nyy institut (for Konkin). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (for Sofovina, Birger).
(Tire fabrics)

S/183/61/000/001/002/006
B101/B205

AUTHORS: Konkin, A. A., Rogovina, A. A., Birger, G. Ye.

TITLE: Present stage and prospects of tire cord production

PERIODICAL: Khimicheskiye volokna, no. 1, 1961, 3-14

TEXT: This is a review of publications on the production of tire cord, which bases primarily on Western literature. In the Soviet Union, tire cord is produced from cotton, viscose and caprone fibers. As the Seven-year Plan (1959-1965) provides for a substantial increase of the production of viscose cord (2.8 times) and caprone cord (22 times), 91% of all tire cord will be made from synthetic fibers in 1965. The review is divided into five sections: 1) Achievements in the field of viscose and polyamide cord production. This section bases chiefly on Western literature. 2) Physicomechanical properties of viscose, caprone, and nylon cord. Besides several Western publications, mention is made of a paper by V. A. Kargin and a paper by M. B. Lytkina, Ye. Ya. Yaminskaya, V. F. Yevstratov, and Ye. V. Troshkina on impact tests: BX (VKh) cord withstood 50 impacts, cord "Super-super", 129, and caprone cord, 850. The optimum modulus and elongation have not yet

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Present stage and ...

been determined. Tests made by A. V. Motorina, A. A. Konkin, N. V. Mikhaylov, and others confirmed that the behavior of polyamide heated in an inert atmosphere differs from that heated in air. 3) Brief analysis of data on the testing and practical use of tires made from different types of cord. It is noted that the NIIShP (Scientific Research Institute of the Tire Industry) has made several tests of tires which showed that caprone cord is best suited for the purpose. This is ascribed to the poor quality of viscose cord. 4) Technical and economic data on the use of viscose and polyamide cord. This section deals with an investigation carried out by VNIIV (All-Union Scientific Research Institute of Synthetic Fibers) in cooperation with the Scientific Research Institute of the Tire Industry, in the course of which the highly stable cord no. 5.45/2/1 was compared with caprone cord no. 10.7/2/1. Both types were assumed to have a lifetime of 63,000 km. When putting the cost of viscose cord as 100%, the following figures are obtained for caprone cord:

Capital cost
Creation of the raw-material basis 138
Production of raw material and fiber 142

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Production of cord referred to a distance of 1000 km covered by the tire 96.7
Expenditure of work needed to produce the cord tissue 116
Prime Cost
Raw material 216
Cord tissue 181
Cord and rubber (per 1000 km) 101.8

The costs for sulfate cellulose and caprolactam were taken from planning figures. According to estimates of GIAP (State Design and Scientific Research Institute of the Nitrogen Industry) and of the All-Union Scientific Research Institute of Synthetic Fibers, the corresponding figures for anide fiber are 107% and 120%, respectively, when putting capital cost and prime cost of caprone cord fiber as 100%. The high price is due to the costs of АГ("AG") salt. According to I. Ye. Krichevskiy and N. P. Fedorenko, a price cut is possible by using non-aromatic starting materials, such as furfurol and butadiene. 5) Prospects of the use of other fibers in the production of tire cord. Reference is made to Western data on polyester, polyvinyl

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